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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Sang-Duk Lee

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CANTOR COLBURN, LLP
20 Church Street
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Hartford, CT 06103

EXAMINER

CARIASO, ALAN B

ART UNIT

PAPER NUMBER

2885

NOTIFICATION DATE

DELIVERY MODE

06/26/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary	Application No. 10/608,940	Applicant(s) LEE ET AL.	
	Examiner ALAN CARIASO	Art Unit 2885	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20090212</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings were received on 30 October 2003. These drawings are approved.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 13-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 13, lines 8-11, "the first portion" and "the second portion" have no antecedent basis.
6. Claim 22, lines 8-11, "the first portion" and "the second portion" have no antecedent basis.
7. Claims 14-21 and 23 are indefinite for depending on indefinite claims 13 and 22.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by UEDA (US 6,486,931 B1).

10. UEDA discloses a method of guiding a light toward a liquid crystal display panel (col.2, lines 47-50), the method comprising: receiving a first light (light components A,B,C in fig.3, col.4, lines 9-12) generated from a light source (3); guiding the first light (A, fig.3) to refract a first portion (col.4, lines 14-22) of the first light (A) toward the liquid crystal display panel and to refract a second portion (col.4, lines 22-24) of the first light (A) toward an opposite direction to transform the second portion of the first light into a second light (any internal light from A in light guide 11) reflecting the second light toward the liquid crystal display panel (col.4, lines 22-25); diffusively refracting the second light (col.4, lines 22-24) by a first amount to transform the second light into a third light (any internal light from components A,B,C in light guide 11 directed away from light source 3); guiding the third light (from A,B,C) to refract a third portion (emerging from light output surface 2b) of the third light toward the liquid crystal display panel and to refract a fourth portion of the third light toward the opposite direction to transform the fourth portion of the third light into a fourth light (any of components A, B and C directed to diffusion surface 2a, col.4, lines 27-30); is reflecting the fourth light toward the liquid crystal display panel (col.4, lines 30-32); diffusively refracting the fourth light by a

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second, amount to transform the fourth light into a fifth light (col.4, lines 33-45), such that the second amount is larger than the first amount (col.3, lines 41-48 states “low dense granulation on left side close to light source 3 and gets higher in direction leaving the light source”); and refracting the fifth light (upon emerging from light output surface 2b) toward the liquid crystal display panel; wherein the second light (from A) is reflected (col.4, lines 22-25) on a first region (fig.3), and the fourth light (a further propagate diffused/reflected light of component A that is further guided rightward in fig.3 away from light source 3 and away from 1st diffusion/reflection in 2a/5) is reflected on a second region (beyond the right cutaway region 11 in fig.3), the first region being spaced apart from the light source (3) by a first distance (extent of component A shown in fig.3), the second region (beyond the right cutaway region 11 in fig.3) being spaced apart from the light source (3) by a second distance (pass right of 11, fig.3), the second distance being larger than the first distance.

11. Claims 3-9 and 13-15, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by MATSUMOTO et al (US 6,502,947 B2).

12. In regards to claims 3-8, MATSUMOTO discloses a light guiding apparatus (figs.1 & 4A) comprising: a light incident face (21) onto which a light generated from a light source (1) is incident; a rear face (22) facing the light incident face (21); a first side face (adjacent 23 on plane XZ in fig.1 or 4A) connecting the light incident face (21) with the rear face (22); a second side face (opposite obscured face forming XZ plane in fig.1 or 4A) connecting the light incident face (21) with the rear face (22), the second side

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face facing the first side face; a bottom face (24) having a plurality of prisms (fig.1) being disposed in parallel, a longitudinal direction of the prisms corresponding to a first direction (col.4, lines 32-37), the prisms having a first portion (near 21) and a second portion (near 22), the first portion being adjacent to the light incident face (21), the second portion being adjacent to the rear face (22), a cross-section of the first portion having a ripple-shape, a ridge of the first portion being round (fig.2, col.5, lines 31-50); and a light exiting face (23 in fig.1 or 4A) facing the bottom face (24); wherein a cross-section of the second portion has a saw-tooth shape (col.4, lines 32-37); wherein the first direction (fig.1) forms a predetermined angle with respect to a longitudinal direction of the light source and wherein the first direction is from the light incident face to the rear face being substantially perpendicular (col.4, lines 32-37) to a longitudinal direction of the light source (1); wherein a height of the light incident face (21) is substantially equal to a height (fig.4B) of the rear face (21' in fig.4B); wherein a height of the light incident face (21) is larger than a height (fig.4A) of the rear face (22).

13. In regards to claim 9, MATSUMOTO discloses a lamp covering device (5, fig.1) for covering a lamp (1) and for reflecting a light (col.4, lines 1-5) generated from the lamp (1) toward a light incident face (21) of a light guide plate (2), the lamp (1) disposed adjacent to the light incident face (21), the lamp covering device (5) comprising: a body portion (5, fig.1) facing the light incident face (21) of the light guide plate (2); a lower portion elongated from a lower end (col.4, lines 5-9) of the body portion toward a lower face (3) of the light guide plate (2); and an upper portion elongated from an upper end (col.4, lines 9-14) of the body portion toward an upper face (23) of the light guide plate

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(2), the upper portion including a covering portion for covering an upper edge (col.4, lines 9-14) adjacent to the light incident face (21) of the light guide plate (2).

14. In regards to claims 13-15, 17 and 18, MATSUMOTO a back light assembly (fig.1) comprising: a light source (1) for generating a first light; a light guiding member (2), including i) a light incident face (21) onto which a light generated from a light source (1) is incident, ii) a rear face (22) facing the light incident face (21), iii) a first side face (adjacent 23 on plane XZ in fig.1 or 4A) connecting the light incident face (21) with the rear face (22), iv) a second side face (opposite obscured face forming XZ plane in fig.1 or 4A) connecting the light incident face (21) with the rear face (22), the second side face facing the first side face, v) a bottom face (24) having a plurality of prisms (fig.1) being disposed in parallel (col.4, lines 32-37), a longitudinal direction of the prisms corresponding to a first direction (col.4, lines 32-37), the first portion (near 21) being adjacent to the light incident face (21), the second portion (near 22) being adjacent to the rear face (22), a cross-section of the first portion having a ripple-shape, a ridge of the first portion being round (fig.2, col.5, lines 31-50), vi) a light exiting face (23 in fig.1 or 4A) facing the bottom face (24); and a light luminance controlling member (4) disposed on the light guide member (2), for controlling luminance of a second light (col.3, lines 52-54) guided by the light guiding member (2); further comprising a light reflecting member (5) of reflecting a third light leaked from the light guiding member (2), the light reflection member (5) disposed under the light guiding member (2); further comprising a light source cover (5) as met by MATSUMOTO in paragraph 13 above; . wherein the light luminance controlling member (4) includes a prism sheet (fig.1), the

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prism sheet having at least one prism (41) formed on a lower face (41) facing the light guiding member (2); wherein the prisms (41) are elongated in a second direction in which the light source (1) is elongated (col.8, lines 18-26).

15. Claims 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by MATSUSHITA (US 6,435,685 B2).

16. MATSUSHITA lamp covering device (28,29 in fig.4, 49 in figs.5A-5C) for covering a lamp (7) and for reflecting (reflector 28, col.8, line 35) a light (L, fig.4) generated from the lamp (7) toward a light incident face (2A) of a light guide plate (2), the lamp (7) disposed adjacent to the light incident face (2A), the lamp covering device (28) comprising: a body portion (28) facing the light incident face (2A) of the light guide plate (2); a lower portion (281) elongated from a lower end of the body portion (28) toward a lower face (EL) of the light guide plate (2); and an upper portion (282) elongated from an upper end of the body portion (28) toward an upper face (EU) of the light guide plate (2), the upper portion (282) including a covering portion (282) for covering an upper edge (EU) adjacent to the light incident face (2A) of the light guide plate (2); (clm.10), wherein the covering portion (28) comprises a first portion (the upper U-bend adjacent edges of sheets 6,5,H) elongated from the upper portion in substantially parallel with the body portion toward the lower portion, a second portion (282) elongated in substantially parallel with the lower portion from the first portion (upper U-bend), and a third portion (angled end member adjacent EU) elongated from the second portion (282) to cover the upper edge (EU) adjacent to the light incident face (2A) of the light guide plate (2).

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17. In regards to claim 11, MATSUSHITA discloses the lamp covering device (49 in figs.5A-5C) of claim 9, wherein the covering portion (49, fig.5A) comprises a first portion (492) elongated from the upper portion (fig.5B) in a predetermined angle (MU) with respect to the upper portion (fig.5B) toward the light incident face (2A) of the light guide plate (2), a second portion (49 right of 492 in fig.5B) elongated from the first portion (492) to cover the upper edge (EU) adjacent to the light incident face (2A) of the light guide plate (2).

18. In regards to claim 12, MATSUSHITA discloses the lamp covering device (28 in fig.4 or 49 in figs.5A-5C) of claim 9, wherein the lower portion (fig.5C) is disposed under a virtual line (lower dotted line in fig.5A) extended from a lower surface (2B) of the light guide plate (2), and the lower portion (fig.5C) further includes a first portion (ML or 491) elongated from the lower portion toward the upper portion (fig.5A), and a second portion (49 right of 491 in fig.5C) elongate in parallel with the body portion from the first portion (ML, 491), such that the covering member (49) for receiving a lamp (7) provides an increased receiving space (fig.5A) for receiving the lamp.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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20. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over MATSUMOTO et al (US 6,502,947 B2) in view of YAMASHITA et al (US 6,874,902 B2).

21. Claim 16 recites a light-shielding member, disposed on a portion of the light luminance controlling member, for shielding a third light exiting from the luminance controlling member, the portion being disposed adjacent to the light incidence face of the light guiding member, so that a bright line due to the light source is reduced, not disclosed by MATSUMOTO.

22. YAMASHITA teaches a light shielding member (6, fig.3, col.17, lines 13-22) disposed on the light deflecting device (4) adjacent to the light incidence face (31) of light guide (3) for the purpose of preventing bright line and dark line in the neighborhood of the primary light source (1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the backlight assembly of MATSUMOTO et al to include the type and positioning of the light shielding member as taught by YAMASHITA et al in order to prevent bright line and dark line in the neighborhood of the primary light source, thereby minimizing unwanted, distracting edge highlighted line at edge of the display.

23. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over MATSUMOTO et al (US 6,502,947 B2) in view of ONO et al (US 6,123,430).

24. MATSUMOTO discloses the claimed invention including the light luminance controlling member comprising a light-concentration sheet (light direction varying sheet 4) for concentrating light diffused by the light guide (col.8, lines 27-42). However,

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MATSUMOTO does not disclose: a light-diffusion sheet for diffusing light guided by the light guiding member, the diffusion sheet disposed on the light guiding member and the light-concentration sheet disposed on the light-diffusion sheet (claim 19); a protection sheet for protecting the light-concentration sheet, the protection sheet disposed on the light-concentration sheet (claims 20 and 21); and a light-shielding member, disposed on a portion of the light-concentration sheet (claim 20) or the protection sheet (claim 21), for the portion of the protection sheet being adjacent to the light incident face.

25. ONO teaches a (light) diffusible sheet (5, figs.1-4) disposed between the light emitting surface (2C) of the light guide (2) and prism sheet(s) (6,7) for the purpose of diffusing output light and directing diffused light toward prism sheets in order to obtain a uniform planar light. ONO further teaches a protection sheet (8) on top of light controlling prism sheet (7) for the purpose of protecting (col.3, lines 7-12) the surface or prisms of at least prism sheet (7). ONO further teaches light shielding at a top edge of protection sheet (8) or EU (fig.4) adjacent the light incident surface (2A) by means of reflector (42,43 in fig.4) for the purpose of preventing the edge EU from being brightly illuminated (col.7, lines 22-25) and avoiding the irregularities in luminance caused by illumination light incident through these end surfaces (col.8, lines 28-35).

26. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the backlight assembly of MATSUMOTO et al to include the type of light diffusing sheet, protection sheet and light shielding as taught by ONO et al in order to output uniform planar light, protect surfaces of the prism sheets and avoid irregular bright edge lights, respectively.

27. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over MATSUMOTO et al (US 6,502,947 B2) in view of KAWAKAMI et al (US 6,712,482 B2).

28. MATSUMOTO discloses the claimed liquid crystal display device including a liquid crystal display panel for displaying an image (col.10, lines 19-27), except: the liquid crystal display panel including an array substrate, a color filter substrate disposed over the array substrate and a liquid crystal layer interposed between the array substrate and the color filter substrate.

29. KAWAKAMI teaches a liquid crystal display panel (2, fig.1, col.8) including an array substrate (pixel electrode 21), a color filter substrate (27) disposed over the array substrate (21) and a liquid crystal layer (L) interposed between the array substrate (21) and the color filter substrate (27) for the purpose of producing colored images. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the backlight assembly of MATSUMOTO et al to include the type of liquid crystal display panel as taught by KAWAKAMI in order to produce finely colored images from a matrix of colored elements.

30. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over MATSUMOTO et al (US 6,502,947 B2) in view of KAWAKAMI et al (US 6,712,482 B2) as applied to claim 22 above, and further in view of NAGAKUBO et al (US 6313891 B1).

31. MATSUMOTO discloses the claimed liquid crystal display device, except: the liquid crystal display panel including an active display region on which an image is

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displayed and a non-active display region, and the light incident face of the light guiding member being disposed in the non-active display region and being disposed close enough to the light source to reduce a bright line due to the light source.

32. NAGAKUBO teaches the effective display area 31a which is shown in the schematic plan view of the liquid crystal panel 31 of the display device in FIG. 12 and located near to the edge 31b thereof in the vicinity of the backlight source 38 which appears close enough to the incident face (35a-fig.11, 55a-fig.13,14) of the light guide, and a non-active display region 31c, for the purpose of showing the area portion of where images are displayed and illuminated by the backlight, beyond the an edge area where no image is displayed. NAGAKUBO further teaches grey or light controlling portions (36a-fig.11, 56b-fig.14) for the purpose of avoiding edge bright lines.

33. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the backlight assembly of MATSUMOTO et al to include the showing of effective and non-active display regions of liquid crystal display panel and backlight arrangement as taught by NAGAKUBO in order effectively illuminate and make visible the active display region of the liquid crystal display panel without interfering edge bright lines.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN CARIASO whose telephone number is (571)272-2366. The examiner can normally be reached on 9-5:30 M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Lee can be reached on (571) 272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alan Cariaso/
Primary Examiner, Art Unit 2885

AC
June 22, 2009